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USCONARC
U S ARMY
ARCTIC TEST BOARD

Fort Greely, Alaska



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Report of

SERVICE TEST OF RELEASE, AUTOMATIC,
CARGO PARACHUTE, 5,000-POUND CAPACITY,

WITH LOAD COUPLER

Date 8 JUNE 1962

Project Nr. ATB 3-202

HEADQUARTERS
UNITED STATES CONTINENTAL ARMY COMMAND
FORT MONROE, VIRGINIA

ATDEV-6 452.161

2 July 1962

SUBJECT: Report of Project Nr ATB 3-292, Service Test of Release, Automatic, Cargo Parachute, 5,000-Pound Capacity, with Load Coupler

TO: Chief of Research and Development
Attn: Air Mobility Division
Department of the Army
Washington 25, D. C.

1. Reference: letter, ATDEV-6 452.161, Hq USCONARC, 3 November 1960, subject: "Confirmatory Test of Release, Automatic, Cargo Parachute, 5,000-Pound Capacity, and Load Coupler."

2. Inclosed is a copy of subject report prepared by the US Army Arctic Test Board.

3. This headquarters concurs in the conclusion as contained in paragraph 6, and the recommendations as stated in paragraph 7, inclosed report. The recommendations are restated in paragraph 3 below.


4. This headquarters recommends that:

a. The Release, automatic, Cargo Parachute, 5,000-Pound Capacity, with Load Coupler, be considered suitable for Army use under arctic winter conditions.

b. The shortcomings listed in Annex b be corrected.

FOR THE COMMANDER:

1 Incl
Rept of Proj Nr ATB 3-292,
USARTESTHD, 8 June 1962,
subj as above


LEE L. STEWART
Colonel, AGC
Asst Adjutant General

Copies furnished:
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HEADQUARTERS
US ARMY ARCTIC TEST BOARD
APO 733, Seattle, Washington

8 JUNE, 1961

REPORT OF TEST OF PROJECT NR ATB 3-292
SERVICE TEST OF RELEASE, AUTOMATIC, CARGO PARACHUTE,
5,000-POUND CAPACITY, WITH LOAD COUPLER

1. AUTHORITY:

a. Directive: Ltr, ATDEV-6 452.161, Hq USCONARC, 19 October 1961, subject: "Service Test of the Release, Automatic, Cargo Parachute, 5,000-lb Capacity with Load Coupler (DA Proj Nr: 7-87-03-004)."

b. Purpose: To determine the suitability of the Release, Automatic, Cargo Parachute, 5,000-Pound Capacity, with Load Coupler, for Army use under arctic winter conditions in air delivery operations.

2. REFERENCES:

a. DA Project Nr: 7X87-03-004(07). RIB Technical Objective Nr: Unknown.

b. CDOG, Par 930b(3), change Nr 6, 3 July 1961

c. Report of Equipment Failure Nr 1, Project Nr ATB 3-292, US Army Arctic Test Board.

d. Ltr, ATDEV-6 452.161/112, Hq USCONARC, 29 September 1959, subject: "Report of Project Nr AB 2858 'Service Test of Release, Automatic, Cargo Parachute, 5,000-Pound Capacity, and Load Coupler'" w/1 incl.

e. Technical Report T-133 59018 P, QM RAE Command, October 1959, subject: "Engineering Test of Release, Cargo Parachute, Individual, Mechanical."

f. Ltr, ATDEV-6 400.116/23, Hq USCONARC, 8 April 1960, subject: "USCONARC-Approved Revised Military Characteristics for a Family of Ground Disconnect Device(s)."

g. Ltr, ATDEV-6 452.161, Hq USCONARC 3 November 1960, subject: "Confirmatory Test of Release, Automatic, Cargo Parachute, 5,000-Pound Capacity, and Load Coupler."

h. Ltr, QMRE-AME, Hq QM R&E Command, 8 December 1961, subject: "TCN 506, Release, Cargo Parachute, 5,000-Lb. Capacity, With Firing Mechanism and Link Assembly, T62-1," w/1 Incl: Maintenance and Operation Manual.

i. Plan of Test, Project Nr ATB 3-292, US Army Arctic Test Board, 23 December 1961, "Service Test of Release, Automatic, Cargo Parachute, 5,000-Pound Capacity, with Load Coupler."

3. DESCRIPTION OF MATERIEL:

a. The Release, Automatic, Cargo Parachute, 5,000-Pound Capacity is made of steel and measures approximately $7\frac{1}{2}$ " x 6" x $1\frac{1}{2}$ ". It weighs approximately six pounds. The device serves as a link in the suspension of cargo parachutes and is designed to open automatically upon ground contact, thereby separating the parachute from the load to prevent overturning or dragging by ground wind. One release device is required for each parachute used. The device is cocked manually during preparation of the load and is armed by the opposing forces of parachute deployment and load weight. The release is actuated by the cessation of those forces. A pyrotechnic time delay mechanism is incorporated in the device to prevent premature release during the unstable period of parachute deployment and development. The release may be used with or without the load coupler.

b. A load coupler is used as a means of attaching up to six releases and parachutes to one common point. The coupler consists of three parallel aluminum plates fastened by belts running through spacer spools which serve as attachment points for load suspension slings and parachute disconnect webs. Load couplers are available in two sizes, containing 8 or 12 spools. The 8-spool coupler measures $5\frac{1}{2}$ " x $5\frac{1}{4}$ " x 7" and weighs 9 $\frac{1}{2}$ pounds. The 12-spool coupler measures $5\frac{1}{2}$ " x $8\frac{1}{2}$ " x 7" and weighs 16 pounds.

c. Six test releases, two 8-spool couplers, and two 12-spool load couplers were received for test by this Board on 15 December 1961. A complete maintenance package for the test release and load couplers was received by this Board on 11 December 1961.

d. A photograph of the test release and test load couplers is shown in Annex C.1.

4. BACKGROUND:

a. A requirement for the test parachute release is stated in reference 2b.

b. Equipment delivered by parachute is, on some occasions, damaged after landing as a result of being overturned or dragged by the cargo parachutes. The erratic performance of the standard type parachute ground disconnects warranted the development of a device of improved dependability

to detach the load upon ground contact. A release and load coupler were developed as components of the Dual Rail Aerial Delivery System (ref 2d).

c. The release and load coupler were tested by the US Army Airborne and Electronics Board during the period of May 1958 - July 1959. Based upon results of these tests, the Airborne and Electronics Board recommended that the release and load coupler be modified to correct deficiencies pertaining to functioning and durability and a modified release and load coupler be returned for check test. The Airborne and Electronics Board further recommended that approved military characteristics be reviewed and, if appropriate, revised. On the basis of the Airborne and Electronics Board report, Hq USCONARC recommended that the release and load coupler be type classified Standard A for use in temperate climates (ref 2d).

d. A modified version of the cargo parachute release and load coupler was tested by the Quartermaster Research and Engineer Command during the period June 1959 - October 1959. The QM R&E Command recommended further modifications pertaining to durability and design (ref 2e).

e. In April 1960, Hq USCONARC completed a review of military characteristics for a family of ground disconnect devices. The revised military characteristics were approved by Hq USCONARC and forwarded to the Chief of Research and Development on 8 April 1960 (ref 2f).

f. On 3 November 1960, Hq USCONARC directed the US Army Airborne and Electronics Board to conduct a confirmatory test of the modified cargo parachute release (ref 2g). This test is currently being conducted.

g. The test release with load couplers tested by this Board was the T62-1.

h. Information concerning tripartite standardization is not available.

5. SUMMARY OF TEST RESULTS: Tests were conducted by Captain William J. Stevenson, Infantry, and other personnel of Test Division 3, US Army Arctic Test Board, utilizing plan of test, reference 2i.

a. General:

(1) Tests were conducted during a temperature range of 23°F to -64°F by personnel equipped with the appropriate arctic clothing, to include the Arctic Mitten Set.

(2) Detailed procedures used for rigging of the test release and load couplers were those developed for use in temperate zones by the US Army Airborne, Electronics, and Special Warfare Board in conjunction with the Quartermaster Training Command.

(3) Prior to the conduct of tests number 2 and 3, the test release was stored outdoors for periods of 2 to 38 days at temperatures ranging from 38°F to -64°F.

(4) The test release and load couplers were satisfactory in all respects.

(5) The test release and load couplers met the military characteristics in all respects.

b. Test Nr 1 - Preoperational Inspection and Physical Characteristics:

(1) A technical inspection of the test release and load couplers revealed the test items were in suitable condition for test.

(2) The physical characteristics of the test release and load couplers were found to be as described in paragraph 3, Description of Materiel.

(3) A photograph of the test release and load couplers is shown in Annex C.1.

c. Test Nr 2 - Functional Suitability:

(1) No difficulties were encountered during a total of 23 parachute deliveries of the items of equipment listed below:

<u>ITEM</u>	<u>PLATFORM USED</u>
Truck, Utility, $\frac{1}{4}$ -Ton, 4x4, M-38	12-foot Aluminum-Faced, Fixed Pin
Howitzer, Light, Towed, Carriage and Mount, 105-mm	12-foot Aluminum-Faced, Fixed Pin
Truck, $2\frac{1}{2}$ -Ton, 6x6, M-35	24-foot Aluminum-Faced, Fixed Pin
Personnel Carrier, Armored, T113E2	20-foot Wooden, Combat Expendable

(2) Tests were conducted at temperatures ranging from 23°F to -34°F. One test release was used for each parachute.

(3) No difficulties were encountered and no special tools were required in rigging the test release and load couplers to the representative items of Army equipment listed in para (1) above, at temperatures ranging from -18°F to -63°F.

d. Test Nr 3 - Functional Suitability of Pyrotechnic Time Delay:

No malfunctions occurred during a total of 40 cartridge firing tests at temperatures ranging from -37°F to -64°F. Actual time of delay ranged from 21 to 23 seconds.

e. Test Nr 4 - Maintenance: With the exception of inspections performed prior to and after use, and release cocking and cartridge replacement prior to reuse, no maintenance of the test release and load couplers was required. No parts were expended in maintaining the test items during the test period; however, one test release was expended. The maintenance instructions were adequate.

f. Test Nr 5 - Durability and Reliability:

(1) Six test releases, two 8-spool couplers, and two 12-spool couplers were used during the conduct of tests. The usage per release and load coupler varied from 5 to 16 deliveries each.

(2) All test items functioned properly during the tests, except for one release which sustained a broken cocking lever during a delivery with ground winds of 15 knots at a temperature of 8°F. This failure rendered the test release inoperable, and the release was removed from further tests.

6. CONCLUSION: It is concluded that the Release, Automatic, Cargo Parachute, 5,000-Pound Capacity, with Load Coupler is suitable for Army use under arctic winter conditions.


7. RECOMMENDATIONS: It is recommended that:

a. The Release, Automatic, Cargo Parachute, 5,000-Pound Capacity, with Load Coupler, be considered suitable for Army use under arctic winter conditions.

b. The shortcoming listed in Annex B be corrected, if practicable.

ANNEXES:

- A - Details of Test
- B - Findings
- C - Photographs
- D - Parachute Delivery Data
- E - Coordination


HENRY E. DAVIDSON, JR.
Colonel, Armor
President

DISTRIBUTION:

- 60 - CG, USCONARC
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- 3 - Board file

ANNEX A - DETAILS OF TEST
REPORT OF TEST - PROJECT NR ATB 3-292

Test Nr 1 - Preoperational Inspection and Physical Characteristics:

1. PURPOSE:

- a. To determine whether the test release and load couplers were in proper condition for test.
- b. To determine the physical characteristics of the test release and load couplers.

2. METHOD:

- a. Prior to initiation of testing, the test release and load couplers were given a technical inspection in accordance with instructions contained in the maintenance package.
- b. The test release and load couplers were weighed, measured, photographed, and examined for unusual characteristics. Weights and dimensions were recorded and significant characteristics listed.

3. RESULTS:

- a. The technical inspection of the test release and load couplers revealed no defect and the test items were found to be in a suitable condition for test.
- b. The physical characteristics of the test items were as follows:

(1) Release:

- (a) Weight: 6 pounds.
- (b) Dimensions: $7\frac{1}{2}" \times 6" \times 1\frac{1}{2}"$.
- (c) Material: Steel.

- | | | |
|--------------------|--|--|
| (2) Load couplers: | <u>8-spool</u> | <u>12-spool</u> |
| (a) Weight: | 9 $\frac{1}{4}$ pounds | 10 pounds |
| (b) Dimensions: | $5\frac{1}{2}" \times 5\frac{1}{4}" \times 7"$ | $5\frac{1}{4}" \times 8\frac{1}{2}" \times 7"$ |
| (c) Material: | Aluminum and steel. | |

c. A photograph of the test release and load couplers is shown in Annex C.1.

Test Nr 2 - Functional Suitability:

1. PURPOSE: To determine the functional suitability of the test release and load coupler.

2. METHOD:

a. Heavy drop loads consisting of Carrier, Personnel, Armored, T-113; Truck, Utility, 4x4, $\frac{1}{2}$ -Ton, M-38; Truck, Cargo, 6x6, 2 $\frac{1}{2}$ -Ton, M-35; and Howitzer, Light, Towed, M-2, 105-mm were rigged for parachute delivery utilizing a single disconnect with each parachute of a cluster, or, when appropriate, a single disconnect with a single parachute.

b. Test load couplers were incorporated into the rigging of each load in accordance with instructions contained in the maintenance package.

c. After rigging, the loads were dropped from a C-130 aircraft flying at an indicated air speed of 130 knots and an absolute altitude of 1,500 feet. Motion pictures were taken and studied. The following data were obtained and recorded for each drop:

- (1) Ground temperature.
- (2) Ground wind speed.
- (3) Altitude temperature.
- (4) Altitude wind speed.
- (5) Ground relative humidity, except at temperatures below -30°F. Below -30°F, no accurate means of measurement of relative humidity was available.
- (6) Type platform.
- (7) Weight and type load.
- (8) Type parachutes.
- (9) Number of parachutes.
- (10) Type coupling.
- (11) Extraction technique.

(12) Release functioning.

(13) Load damage.

d. The functional suitability of the test release was evaluated, based on observation of drops, analysis of test data, and studies of motion pictures.

3. RESULTS:

a. A total of 23 parachute deliveries of representative items of Army equipment (par 2a) was conducted at temperatures ranging from 23°F to -34°F. A detailed listing of loads and drop conditions is contained in Annex D.

b. All releases and load couplers functioned normally on all deliveries, and no malfunctions were observed.

c. One release was damaged during a delivery with ground winds of 15 knots. The cocking lever was broken, and the release was removed from further tests (Test Nr 5).

d. No difficulties were encountered and no special tools were required in rigging at temperatures ranging from -18°F to -63°F which were attributable to use of the test release or load couplers.

e. No load damage was incurred during the tests.

Tests Nr 3 - Functional Suitability of Pyrotechnic Time Delay:

1. PURPOSE: To determine the functional suitability of the pyrotechnic time delay cartridge.

2. METHOD: In addition to tests conducted in conjunction with Test Nr 2, Functional Suitability, cartridges were continually exposed to low ambient temperatures. During periods of extreme cold, samples of the test cartridge were withdrawn from storage and fired in a cold-soaked test release. The following data were recorded:

- a. Time delay in seconds.
- b. Length of cold-soak.
- c. Temperature of cold-soak for preceding 48 hours.
- d. Temperature at time of firing.

3. RESULTS:

a. No malfunctions were observed during a total of 40 cartridge tests at temperatures ranging from -37°F to -64°F.

b. The following data were recorded:

TEST NR	T (Seconds)	DELAY (Days)	COLD-SOAK TEMPERATURES DURING 48 HOURS COLD-SOAK (°F)	TEMPERATURE AT FIRING (°F)
1	23.5	34	-11 to -37	-37
2	23	"	" "	"
3	23	"	" "	"
4	23	35	-35 to -44	-44
5	22.5	"	-35 to -46	-46
6	23	"	" "	"
7	21	36	-22 to -41	-40
8	21.5	"	" "	"
9	22	"	" "	"
10	21.6	"	" "	"
11	22	"	" "	"
12	21	"	" "	"
13	22	38	-22 to -48	-38
14	23	"	" "	"
15	21	"	" "	"
16	22	"	" "	"
17	23	"	" "	"
18	21.5	40	-40 to -52	-52
19	21	"	" "	"
20	21.5	"	" "	"
21	22.5	"	" "	"
22	23	"	" "	"
23	21.5	46	-52 to -61	-61
24	22	"	" "	"
25	21.5	"	" "	"
26	23	"	" "	"
27	22	"	" "	"
28	22	"	" "	"
29	22.5	47	-33 to -61	-58
30	22.5	"	" "	"
31	22.5	"	" "	"
32	22.5	"	" "	"
33	22.5	47	-33 to -61	-58
34	23	"	" "	"
35	22	78	-18 to -64	-52
36	23	"	" "	-58
37	22	"	" "	-60
38	22	"	" "	-64
39	23	"	" "	"
40	22	"	" "	"

Test Nr 4 - Maintenance:

1. PURPOSE: To determine whether the test release and load couplers can be readily maintained.

2. METHOD: Using appropriate skills and tools, all necessary authorized maintenance was performed on the test release and load couplers in accordance with instructions contained in the maintenance package. Organizational maintenance was performed outdoors under field conditions to an extent sufficient to determine whether it could be performed under these conditions. Data with respect to the following was recorded.

- a. Man-hours expended in maintaining the test release and load coupler.
- b. Difficult or time-consuming operations.
- c. Requirement for special tools.
- d. Adequacy of maintenance publications.

3. RESULTS:

a. With the exception of inspections performed prior to, and after use, and release cocking and cartridge replacement prior to reuse, no maintenance was required. No parts were expended in maintaining the test release or load couplers during the test period.

(1) Average time required per release and load coupler for inspection: five minutes.

(2) Average time required per release and load coupler for cocking and cartridge replacement prior to reuse: seven minutes.

b. The maintenance instructions were adequate for all maintenance required.

c. No special tools were required in maintaining the test release and load couplers, and no difficult or time consuming operations were encountered.

Test Nr 5 - Durability and Reliability:

1. PURPOSE: To determine whether the test release and load couplers were durable and reliable.

2. METHOD: The test release and load couplers were exposed to prevailing weather conditions and used to the maximum extent practicable during the test period. Data with respect to the following were recorded.

- a. Total number of times each release was used.
- b. Failures which rendered the test release inoperable or made further use inadvisable.

3. RESULTS:

- a. Six test releases, two 8-spool couplers, and two 12-spool couplers were used during the conduct of tests. The usage per release and load coupler varied from five to sixteen deliveries each. A detailed listing of usages is contained in Annex D.
- b. All test items functioned properly during the tests, however, one release sustained a broken cocking lever during a delivery with ground winds of 15 knots at a temperature of 8°F. This failure rendered the test release inoperable, and the release was removed from further tests (par 1, Annex B).
- c. There were no indications of excessive wear or deterioration of the remaining releases or of the load couplers upon completion of test.
- d. A photograph of the damaged release is shown in Annex C.2.

ANNEX B

FINDINGS

SUGGESTED CORRECTIVE ACTION REMARKS

SECTION I

This section contains deficiencies requiring elimination in order to make the item acceptable for use on a minimum basis.

NONE.

SECTION II

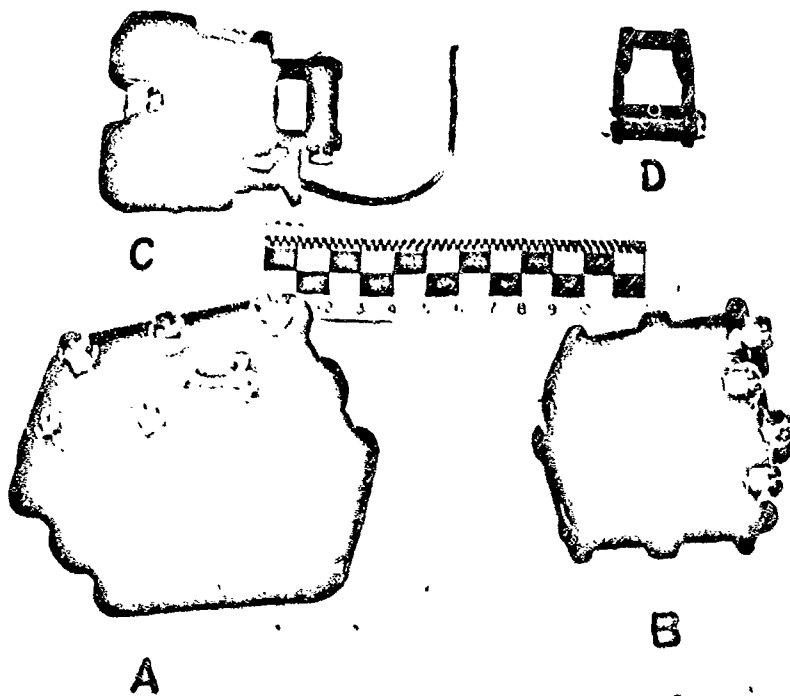
This section lists those deficiencies and shortcomings in the item which were discovered during test and satisfactorily corrected prior to completion of the test. They no longer represent a defect in the item tested. The correction must be applied to the production model of this item.

NONE.

SECTION III

This section contains shortcomings which should be corrected, if it can be done without unduly complicating the item or inducing another undesirable characteristic, either concurrent with elimination of deficiencies in Section I or in production engineering, or by product improvement.

- | | | |
|---|---|--|
| 1. One release cocking lever opened and was broken during a parachute delivery. | Provide a means of securing cocking lever in closed position. | Report of Equipment Failure Nr 1, Test Nr 2 and 5. |
|---|---|--|



US ARMY

US ARMY ARCTIC TEST BOARD **FORT GREELY, ALASKA**

PROJECT NR ATB 3-292

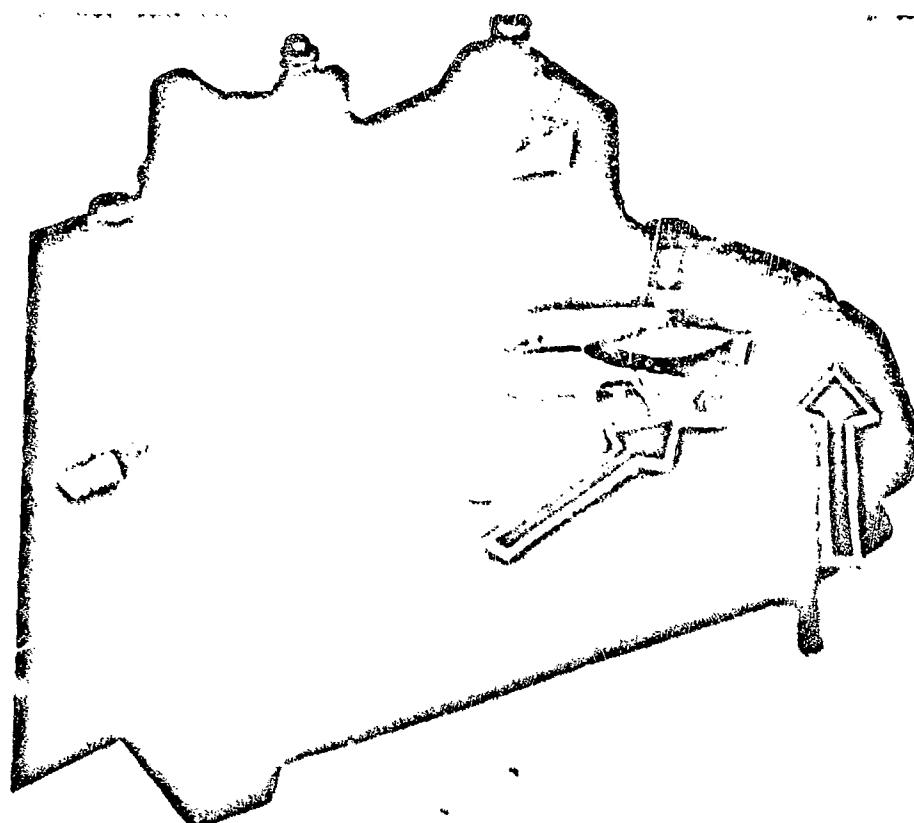
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NEGATIVE NR 143-1

SERVICE TEST OF RELEASE, AUTOMATIC, CARGO PARACHUTE,
 5,000-POUND CAPACITY, WITH LOAD COUPLER

A - LOAD COUPLER, 12-SPOOL
 B - LOAD COUPLER, 8-SPOOL

C - RELEASE, 5,000-POUND CAPACITY
 D - SUSPENSION LINK



US ARMY ARCTIC TEST BOARD

FORT GREELY, ALASKA

PROJECT NR ATD 3-292

10 JAN 68

REPORT NR 253-1

SERVICE TEST OF RELEASE, AUTOMATIC, CARGO PARACHUTE.
5,000-POUND CAPACITY, WITH LOAD COMPLET

A - NOTE CUT AND BENT COCKING PIN, INDICATING THAT RELEASE
COCKING LEVER BROKE IN OPEN POSITION.

D - BROKEN RELEASE COCKING LEVER.

ANNEX D

PARACHUTE DELIVERY DATA UTILIZING TEST RELEASE

Load	Rigged Weight (Pounds)	Test Releases Used	Cold-Soak Period (Days)	Cold-Soak Temp (°F)	Extraction Parachute Used	Temp at time of Drop (°F)			Surface Relative Humidity	Type Coupler Used	Number and Type Parachutes Used
						Sur-Altitude	face	Altitude			

Carrier, Pers											
Armored I-113	22,000	1,2,3,4,5,6	7	40	-35	24'	-33	-26	0	7	Recorded 12-spool Nr 1 6,G-11-A

Equipment Dropped on Wooden Combat Expendable Platform

Not

Equipment dropped on Aluminum-Faced, Fixed Platform

Not

105-mm Howitzer	7,307	1,2	16	4	-35	15'Unreefed	-34	-27	0	0	Recorded 12-spool Nr 2 2,G-11-A
1-Ton Truck	3,682	4,5,6	28	19	-63	15'Unreefed	-22	-1	3	4	71% 12-spool Nr 2 3,G-12
1-Ton Truck	14,12,4	2,3,4,5,6	34	19	-63	24'	-16	-1	0	0	71% 12-spool Nr 1 5,G-11-A
1-Ton Truck	3,682	3,4,5	4	18	-31	15'Unreefed	-14	-6	14	0	71% 8-spool Nr 1 3,G-12
105-mm Howitzer	7,307	1,6	7	4	-22	15'Unreefed	-14	-14	0	0	73% 12-spool Nr 2 2,G-11-A
1-Ton Truck	3,682	2,3,4	7	4	-22	15'Unreefed	-14	-14	0	0	73% 8-spool Nr 2 3,G-12
1-Ton Truck	3,682	1,2,3	9	19	-30	15'Unreefed	-6	-13	3	5	76% 8-spool Nr 1 5,G-12
1-Ton Truck	14,12,4	1,2,3,4,5	14	18	-34	24'	14	-6	0	8	79% 12-spool Nr 1 5,G-11-A
105-mm Howitzer	7,307	2,4	8	19	-34	15'Unreefed	8	-12	15	12	74% 12-spool Nr 2 2,G-11-A
1-Ton Truck	3,682	4,5,6	7	17	1	15'Unreefed	6	0	0	10	76% 8-spool Nr 2 3,G-12
1-Ton Truck	3,682	1,3,4	3	24	-6	15'Unreefed	14	-5	7	20	70% 8-spool Nr 1 3,G-12
1-Ton Truck	3,682	1,3,4	1	10	-4	15'Unreefed	3	-1	3	15	76% 8-spool Nr 2 3,G-12
1-Ton Truck	3,682	1,3,4	11	34	-47	15'Unreefed	8	-12	3	10	74% 8-spool Nr 1 3,G-12
105-mm Howitzer	7,307	5,6	11	34	-47	15'Unreefed	8	-12	0	10	74% 12-spool Nr 2 2,G-11-A
1-Ton Truck	7,307	1,3	8	23	-18	15'Unreefed	21	-7	0	25	71% 12-spool Nr 1 2,G-11-A
1-Ton Truck	3,682	4,5,6	8	22	21	15'Unreefed	21	-7	0	25	71% 8-spool Nr 2 3,G-12
105-mm Howitzer	7,307	1,3	6	33	-1	15'Unreefed	22	-4	0	25	77% 12-spool Nr 1 2,G-11-A
1-Ton Truck	3,682	4,5,6	6	33	-1	15'Unreefed	22	-4	0	25	77% 8-spool Nr 1 2,G-12
105-mm Howitzer	7,307	1,3	1	27	-1	15'Unreefed	21	0	0	20	80% 12-spool Nr 2 3,G-12
1-Ton Truck	3,682	4,5,6	1	27	-1	15'Unreefed	21	0	0	20	88% 8-spool Nr 1 3,G-12
1-Ton Truck	2,682	1,2,4	1	28	-1	15'Unreefed	23	0	0	20	88% 8-spool Nr 2 3,G-12
1-Ton Truck	3,682	1,3,4	1	28	-1	15'Unreefed	23	0	0	20	88% 8-spool Nr 2 3,G-12

ANNEX E - COORDINATION OF PLAN

UNITED KINGDOM AND CANADIAN COMMENTS

PLAN OF TEST - PROJECT NR ATB 3-292

1. The British Liaison Officer, USCONARC, did not reply.
2. The Canadian Liaison Officer, USCONARC did not reply.